printing errors listed in a previously filed Make of Record Letter dated March 9, 1990. These revisions are not the defects relied upon for purposes of this reissue application.

Claims 1-7, 10-12 and 17-20 were rejected under 35 U.S.C. § 112 as non-enabling for not claiming means for moving the glass. Applicants respectfully traverse this rejection.

As the Examiner is aware, § 112 requires that the claims be supported by the specification and the specification be "enabling" only to a person "skilled in the art to which it pertains, or with which it is most nearly connected." The choice of means for moving the glass is a matter of engineering skill and is not to be used to limit the scope of claim protection to which Applicants are entitled. Therefore, the Examiner's rejection of claims 1-7, 10-12 and 17-20 is improper and should be withdrawn.

The specification was objected to under 35 U.S.C. § 112 as non-enabling to support claims 17 and 18. Applicants respectfully traverse this rejection.

Applicants hereinbelow parse claims 17 and 18 and give page and line support from their patent for the invention as now claimed:

17. Glass tempering apparatus comprising: first and second deformable platens each of which has quench openings that move therewith during deformation thereof; and the first and second deformable platens opposing each

Col. 2, lines 38-42; Col. 4, lines 41-42
Col. 4, lines 47-48; Dwg. Figs. 1 & 4-8

Col. 5, line 23; Col. 4, lines 5-6;
Dwg. Figs. 1 & 4-8

other to receive a bent glass sheet therebetween to supply quenching gas through the quench openings to temper the bent glass sheet.

18. Glass bending and tempering apparatus comprising: a first deformable platen including a deformable quench portion for receiving a heated glass sheet; said deformable quench portion having quench openings that move therewith during the deformation of the quench portion thereof; a second deformable platen having quench openings that move therewith during deformation thereof; and the quench portions of the first deformable platen and the second deformable platen opposing each other with a bent glass sheet therebetween to supply quenching gas through the quench openings to temper the bent glass sheet.

Col. 4, lines 30-31 & 33-37; Dwg. Figs. 1 & 4-8

Col. 4, lines 57-68

Col. 5, lines 10-13

Claim 20 has been amended to conform to the specification. Claim 20 is parsed hereinbelow and page and line support is given to support the invention as now claimed.

20. Apparatus for bending and tempering glass sheets comprising:

upper quench tubes arranged in longitudinal rows which are spaced apart and defining an upper platen,

Abstract, line 1

Dwg. Figs. 1-3 and 5-8

NM

openings see cl 18

openings

lower quench tubes arranged in longitudinal rows which are spaced apart and defining a lower platen, Dwg. Figs. 1-3 and 5-8

each longitudinal row of lower quench tubes being supported on a support, Dwg. Figs. 1, 2 and 4-8

no support for tubes

openings

rollers rotatably mounted between pairs of lower quench tubes for transporting the glass sheet, Dwg. Fig. 2

no pairs of tubes NM

power means connected to the rollers for rotating them, Dwg. Figs. 1 and 4-8

etc

means connected to the lower support for moving the lower support to change the vertical position of the lower quench tubes, whereby the glass sheet is bent, and the rollers to a quench position where the lower quench tubes and the quench rollers have the same contour as the bent glass sheet, and Dwg. Figs. 1 and 4-8

NM

NM

means connected to the upper support for moving the upper support to change the vertical position of the upper quench tubes to a quench position where the upper quench tubes have the same contour as the bent glass sheet.

As to claim 19, support for quench portions of platens opposing each other is found at column 2, lines 55-65 and at column 5, lines 10-13 "quenching gas is supplied to the quench openings of both platens 14,22, and thereby to both sides of glass sheet 12." Also, drawing Figures 1 and 4-8 support this recitation.

Enablement for the omission of "bending" in claim 17 is found at column 2, lines 38-42 and column 4, lines 42-43.

One skilled in the art to which this patent relates would know the disclosed platens are "to receive a bent glass sheet therebetween." In column 6, lines 18-46, the cycle of operation is discussed. In column 6, lines 33-35, the glass sheet is "then immediately quenched" indicating the separate steps of bending and quenching. Because the glass sheet is oscillated between the platens (column 6, line 29), the platens are continually receiving a bent glass sheet.

In claims 18-19 "including a deformable quench portion" is supported by "the actuator is constrainable and has the ability to lift portions of the first platen a controlled distance . . . to lift portions of the first platen . . . . (Column 2, lines 60-65).

In claims 17-18 "actuator" is left out. As the platens are deformable, it is merely a matter of engineering skill to employ an actuator and such a means need not be used to limit the scope of the claims.

Claim 20 has been amended to recite only those elements disclosed in the specification needed to practice Applicants' invention. As the rollers are rotatably mounted between pairs of quench tubes, the rollers must change position with the change of position of said pairs of quench tubes.

Claims 17-20 were rejected under 35 U.S.C. § 112 for the reasons set forth in the objection to the specification. As hereinabove described, the specification clearly conforms to the statute. Therefore, Applicants submit that claims 17-20 also conform to the statute and are allowable.

Claims 1-16 were rejected under 35 U.S.C. § 112 as non-enabling for reciting in claims 1, 15 and 16 "and quenching gas being supplied." Claims 1, 15 and 16 have been amended to recite "means for supplying quench gas to the quench openings" as suggested by the Examiner. Applicants submit that amended claims 1-16 conform to the statute.

Claims 17-20 were rejected under 35 U.S.C. § 112 as being indefinite.

Claims 17-19 have been amended in light of the comments of the Examiner. Applicants submit that amended claims 17-19 conform to the statute.

Claim 20 has been amended to delete cooling section and lower support bar. Also "bent glass sheet" has been provided with an antecedent. Therefore, claim 20 is felt to conform to the statute.

The reissue specification has been objected to under 35 U.S.C. § 132 for allegedly introducing new matter into the specification. Applicants respectfully traverse this rejection.

The quench openings of the upper and lower platens do oppose each other as illustrated in Figures 1-8. As drawings alone provide a "written description" of an invention as required by § 112, and additional support is found in the specification at column 2, lines 55-60, the clarification to column 4 is supported in the application as originally filed and thus is not new matter and the objection should be withdrawn.

"That defines a quench portion" refers to the portion of one platen which includes the quench openings.

Support for such recitation is found in drawing Figures 2 and 3.

Claims 1-20 were rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification. Applicants respectfully traverse this rejection. The column 4 clarification is clearly supported by the specification and drawings as hereinabove described. Therefore, the rejection is improper and should be withdrawn.

General Objection To Declaration

Applicants have enclosed an unexecuted proposed substitute Declaration for the Examiner's review to correct the information noted. Upon approval, the Substitute Reissue Declaration will be executed and submitted.

Specific Reissue Insufficiencies

The substitute Declaration reiterates the insufficiency in the claims and specifies that Applicants failed to claim all they were entitled to in the patent that issued. The undersigned is filing a declaration herewith specifying that the full scope of the invention was not appreciated when the original application was filed.

As to the Examiner's statement that "such does not recite error", Applicants cannot decipher what such is as there is no antecedent for such.

However, Applicants submit that amended claim 20 is supported by the specification and that the reissue Declaration is proper.

35 U.S.C. § 251 Rejection

Claims 1-20 were rejected under 35 U.S.C. § 251 as being based upon a defective reissue Declaration. Applicants have complied with all the informalities noted in both the "General Objection" and "Specific Reissue Insufficiencies" section of the Office Action. Therefore, Applicants respectfully request that this rejection be withdrawn.

Wholly Or Partly Inoperative

The undersigned submits an affidavit herewith further clarifying the "inoperative" aspect of Applicants' patent. Applicants make no inference that the patent is "inoperative." This language is taken from the regulations and is formal only. As the Examiner is aware, it does not mean that the invention will not operate.

Patent claims 1-16 have the presumption of validity together with extensive commercial success. Therefore, the patent cannot be considered invalid unless adjudicated as being such.

For the foregoing reasons, the rejection of claims 1-20 based upon a defective reissue Declaration under 35 U.S.C. § 251 is now improper and should be withdrawn.

Consent of Assignee

The application was objected to under 35 U.S.C. § 251 as lacking the written consent of all assignees. Glasstech, Inc. is the owner of all interest in the patent. A copy of the Assignment document assigning Glasstech Corporation's interest to Glasstech, Inc. is attached.

Prior Art Rejections

Claims 17-19 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Yoshizawa, Nushi, or McMaster '854. Applicants respectfully traverse this rejection.

Yoshizawa teaches the combination of a non-deformable glass shaping mold and a cloth covering of felt material for covering a shaping surface of the non-deformable mold. The felt cloth covering disclosed prevents a glass sheet from sticking to the shaping surface and has a longer life than a fiberglass cloth covering. The mold has a cooling nozzle mounted in its surface and the felt cloth covering has a hole therethrough to allow a cooling medium to pass from the nozzle to a glass sheet. It is alternatively taught that where the felt sheet is of a permeable material, the hole in the felt material may be dispensed with.

Yoshizawa contains no teaching or suggestion of deformable platens and is therefore an improper 35 U.S.C. § 102 reference. Worth noting is that no allowance in the combination is made for exhausting the cooling medium. Therefore, as anyone skilled in the art would know, use of the combination for cooling would be minimally useful, if at all.

Nushi et al. likewise teaches a non-deformable apparatus for bending glass sheets that includes a lower mold having a shaping surface encircled by a ring mold. A glass sheet is shaped on the lower mold surface and after the shaping, the ring mold is moved relative to the lower mold to lift the glass sheet above the lower mold. Once the glass sheet is elevated above the lower mold, air is supplied through a plurality of holes in the lower mold to quench the glass sheet suspended on the ring mold.

Nushi et al. contains no teaching or suggestion of deformable platens and is therefore an improper 35 U.S.C. § 102 reference.

McMaster et al. teaches a non-deformable male vacuum mold having a downwardly facing shaping surface for shaping a glass sheet. Air is blown upwardly from below a conveyor against a heated glass sheet such that the glass sheet is lifted and the mold ring is movable under the glass sheet. The glass sheet is press-bent between the vacuum mold and ring mold. Vacuum drawn assists in the lifting of the glass sheet off the conveyor and in the bending of the glass sheet.

McMaster et al. contains no teaching or suggestion of a deformable platen and is therefore an improper 35 U.S.C. § 102 reference.

In addition, any combination of Yoshizawa, Nushi et al. or McMaster et al. could not meet the terms of any of claims 17-19 or, for that matter, claims 1-20. Any combination would still lack a deformable platen as required by claims 1-20.

For these reasons, Applicants submit that the rejection of claims 17-19 under 102(b) as anticipated is improper and should be withdrawn.

Claims 1-19 were rejected under 35 U.S.C. § 103 as being unpatentable over Nushi or Yoshizawa, both when taken with any of Claassen ('751 or '577) or Bezombes. Applicants respectfully traverse this rejection. In sum and broadly speaking, neither has "first and second deformable platens opposite each other and thus neither discloses or suggests "quench openings that move with the (opposing) platens during deformation," of the glass sheet (claim 17) whereby to enable

"equal thermal conditions during tempering and a more uniformly tempered glass sheet." (Column 2, lines 40-43).

Nushi and Yoshizawa are discussed hereinabove. Claassen ('751 or '577) teaches a vacuum mold with a curved shaping surface that shapes a heat-softened glass sheet by suction thereagainst. The shaping surface of the vacuum mold is non-deformable as the glass is shaped. The adjustment of the shaping surface is a preset of the surface and thus there is no movement of the platen during deformation of the glass sheet. More specifically, the vacuum mold includes a rigid back plate and a flexible, perforated lower shaping wall connected to the back plate through a plurality of adjustable connectors. The contour of the shaping wall can be adjusted into a preset and readjusted into another different preset by adjusting the length of each connector between the back plate and shaping wall. As a result, the combination that would result from incorporating the teachings of Claassen ('751 or '577) with Nushi or Yoshizawa would still lack a deformable platen wherein the "quench openings move with the platens during deformation" of the glass sheet as claimed.

Bezombes, like Claassen, teaches a non-deformable adjustable mold to preset a desired shape before the glass sheet is shaped. Specifically, the shaping mold is composed of a plurality of elements or bars, each of which is individually adjustable. Once the elements or bars are adjusted to define a curved shape, the elements or bars are fixed (bound together) at the selected curvature for shaping a heated glass sheet against a complementary surface. As a result, the combination that would result from incorporating the teachings of Bezombes with Nushi or Yoshizawa would still lack "quench openings (which) move with the platens during deformation" of the glass sheet as claimed.

For these reasons, Applicants submit that the rejection of claims 1-16 is improper and should be withdrawn.

Double Patenting

Claims 1-19 were rejected under the judicially created doctrine of obvious-type double-patenting. Upon the allowance of the reissue application, Applicants will file a Terminal Disclaimer.

Other Art Citations

Revells, Kahle, Kellar, Boyles, Websters and Freidel were cited but not applied. None have first and second deformable platens which have "quench openings (which) move with the platens during deformation" of the glass sheet as claimed.

Different Invention Is Not Error

Claims 17-20 were rejected under 35 U.S.C. § 251 as being a new and different invention from what was claimed in the patent. Applicants respectfully traverse this rejection for the reasons set forth hereinabove and hereinbelow.

The Declaration was also objected to under 37 C.F.R. § 1.175(a) for failing to state error. Applicants respectfully traverse this rejection. Applicants have submitted a substitute reissue declaration that complies with 37 C.F.R. § 1.175.

Claim 17 recites a "tempering apparatus" as disclosed in column 2, lines 38-42 and column 4, lines 41-42 of the specification. As such, claim 17 is not for a different invention, but covers more broadly the glass

bending and tempering apparatus of claim 1 as the Applicants are entitled to do under the reissue statute where they have claimed less than they had a right to claim.

Claims 18 and 19 recite "quench portions" in each platen. Such limitation defines the scope of the claim coverage materially different from the original claim coverage and the recitation of "quench openings spaced throughout both platens" can be omitted.

Claim 20 as amended is supported by the specification as hereinabove described. Elements not specifically supported by the specification have been omitted.

For the above reasons, the 35 U.S.C. § 251 rejection is improper and should be withdrawn.

Conclusion

This Amendment is believed to be fully responsive to the comments and suggestions of the Examiner and to place this reissue application in condition for allowance.

The undersigned asks that the Examiner telephone the undersigned to answer any questions he may have regarding the reissue application or this Amendment.

Respectfully submitted,

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